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A REPORT ON A COLLECTION OF COCCIDAE FROM ARGENTINA, WITH DESCRIPTIONS OF APPARENTLY NEW SPECIES (HOM.).

By Harold Morrison, *U. S. Bureau of Entomology*.

The following list of new and described species of Coccidae is based on collections made by Sr. P. Jorgensen in three parts of the Argentine republic, at Mendoza, in the west, in Misiones Territory, in the north, and at Buenos Aires, during the years 1909–1911, and sent by him to Dr. L. O. Howard, Chief of the U. S. Bureau of Entomology for possible determination. All of the information regarding date of collection and host plants are from Sr. Jorgensen's notes accompanying the lots of material. The single representative of the subfamily Diaspinae in the collection has been identified by Mr. E. R. Sasscer. The material has been prepared for microscopic study largely by Misses B. M. Boss and Sadie Keen, employees of the Bureau of Entomology. The photographs used have been made by Mr. J. H. Paine. The drawings illustrating the structural characteristics of the species have been prepared by Emily Morrison who has also been of much assistance in other ways, and to all of these the writer is correspondingly indebted.

Fam. **COCCIDAE.**[1]

Subfam. **MONOPHLEBINAE.**

Genus **Icerya** Sign.

Icerya minima, n. sp.

(Pl. **4,** fig. 1; pl. **6,** fig. 2, A-M.)

Adult Female.—Maximum length of body and ovisac observed 4 mm., maximum length of shriveled body of insect observed 2 mm. maximum extension of ovisac behind hind margin of insect observed 2.5 mm.; maximum width of shriveled body of insect observed 1.5 mm.; color of dried adult female very dark reddish to blackish red, more or less obscured dorsally by a faint whitish powdery and cottony secretion; body of insect dorsally, strongly and irregularly wrinkled transversely; shape of dried body variable, oval or more typically broader behind, tapering in front, with the two ventral halves of the body shriveled up so that the anterior and posterior faces meet below at the middle line to form a broad round-bottomed V as viewed from the side; dorsum so shriveled near the margin that there is left all the way round the body a rather prominent marginal border area; ovisac secreted from the posterior face of the ventral surface, shape somewhat variable, depending apparently on the state of shrinkage of the female, typically flaring out below on each side to reach its greatest width opposite the hinder margin of the body, then tapering gradually to a rounded apex, the whole having the shape of a flattened wedge with rounded off edges, only faintly longitudinally ridged and grooved, appearing rather closely woven but quite fragile, white in color, very indistinctly tarnished in some specimens.

Body of Adult Female.—Mounted on a slide 2–2.5 mm. long, 1.5 mm. wide, rather elongate egg-shaped, broadest behind; when boiled in KOH giving off a small amount of reddish brown stain; with a few large stout setae of varying lengths scattered over the dorsum, particularly near the margin, these forming a comparatively dense cluster around the dorsal anal opening, although here they are smaller than elsewhere, each seta set in a conical protruding base, the longest observed about 190μ long from base to apex, or about 200μ from the base of the socket to the apex of the seta, which is bluntly rounded, diameter of longest hairs at base about 10μ, diameter of socket about 26μ, height of socket about 18μ, these dimensions sometimes slightly exceeded, and frequently less; with multiocular gland pores scattered over the dorsum, the relative abundance of occurrence, but not necessarily the number corresponding pretty closely to that of the setae, these pores having a maximum diameter of about 10μ and consisting in surface view of

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[1] The system of classification followed is that used in the Catalogue of the Coccidae of the World by Mrs. Fernald.

a central ring surrounded by a single circle of similar rings, the number in the circle varying from 6 to 8, with 7 the most frequent, and these in turn surrounded by a continuous thickened chitinous circle, in profile the small circles appearing as a bundle of tiny cylinders protruding from the thickened circular enclosing band; body ventrally with smaller hairs and fewer gland pores scattered over the anterior half, on the posterior half with a narrow but conspicuous, irregularly circular or oval continuous band of closely set multiocular gland pores and nearly blunt-tipped setae which evidently are responsible respectively for the secretion and support of the ovisac, this band located on the ventral surface of the abdomen, extending across it just behind the posterior legs and curving back and running around the posterior portion of the abdomen parallel and close to the body margin, the setae of this band with bases distinctly different in type from those of the other hairs found on the body; with five small irregularly-shaped clear cicatrices included within that portion of the band crossing the abdomen just behind the posterior legs, of which the middle is the smallest and the intermediate pair the largest; with three ventral cicatrices, circular or somewhat irregular in outline, the median much the largest, placed inside the ventral gland band near the posterior end of the body; the relatively large, oval anal opening placed a little back of the middle of the dorsum of the abdomen; with a series of indeterminate chitinized structures, in reality small invaginations of the body wall presumably for muscle attachment, curving forward and outward from the anal opening on each side, these apparently 7 or 8 in number in each series, and with one or two rows of similar but smaller structures on each side of this larger row, and still another row, of small size, ventrally, curving outward and forward from the end of the ventral cicatrices on each side; while not definitely determinable from the material at hand, apparently with from three to five rows of these tiny invaginations dorsally on each side of the middle line; antennae 9-segmented, the relative shape and size of the segments shown in the figure, the lengths of the segments in microns as follows:[1]

II.	III.	IV.	V.	VI.	VII.	VIII	IX.
82	60.5	46.5	46.5	43	broken	..	..
78.5	60.5	43	46.5	broken	..	..	..
78.5	60.5	44	43	43	37.5	43	71.5
82	60.5	43	48	32	35.5	132	
75	50	48	48	41	35.5	46.5	82
82	57	48	50	43	39	43	85.5
82	53.5	35.5	39	35.5	32	43	89
82	60.5	41	39	28.5	28.5	39	85.5

legs not unusual for the genus, lengths of the parts of a middle leg, femur 310μ, tibia 335μ, tarsus 207μ, claw 66μ, claw slender, slightly curved, digitules of both tarsus and claw probably broken off, the remaining portions on the claw extending only a little beyond the middle, slender, seta-like, tarsus noticeably curved, with a number of stout spine-like setae, tarsal digitules, if present, represented by two small hairs set some distance from the apex of the tarsus and projecting very slightly beyond it, tibiae also with a number of stout spine like setae ventrally and some slender longer ones above; thoracic spiracles rather large and elongate, abdominal spiracles marginal, much smaller than the thoracic, the connecting tube less chitinized and usually shriveled, in three pairs, located in the posterior portion of the abdomen.

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[1] In this and succeeding tabulations of antennal measurements, the length of the first segment is always omitted as it is so often twisted or distorted that it is rarely possible to obtain an accurate measurement.

Young Larva.—Total length 0.5 mm. more or less, clongate oval, about equally narrowed before and behind, antennae 6-segmented, typical lengths as follows: II, 39μ; III, 28.5μ; IV, 30μ; V, 25μ; VI, 89μ; antennae and particularly the legs large and conspicuous in proportion to the body, lengths of the parts of a middle leg about as follows: coxa 46.5μ, trochanter and femur 114μ, tibia 121μ, tarsus 107μ, claw 36μ, claw slender, only slightly curved, with a tiny and obscure denticle near the tip; with relatively few large hairs and multiocular gland pores scattered over the dorsum of the body, the hairs at the caudal apex slender, acute apically, distinctly but not conspicuously longer than some of the other marginal and body hairs which are bluntly rounded apically, longest caudal hair observed 303.5μ long; ventral abdominal hairs much smaller and more slender; with a single median ventral cicatrix, in this stage apparently a glandular organ placed on a slight protuberance located at the caudal apex of the body; anal opening dorsal, near but not at the caudal end of the body, surrounded by a stout circular ring marked with radiating ridges or thickenings; with three pairs of tiny slender abdominal spiracles; no traces of the ovisac-secreting band of pores, as such or of the hairs peculiar to it observed.

Described from four mounted adults and a number of mounted larvae, and from four unmounted specimens from Mendoza, Argentina, under collection number 148*a*. There is no information as to the exact date of collection or of the name of the host.

The types are in the U. S. National Collection of Coccidae.

Subfam. **DACTYLOPIINAE.**

Genus **Asterolecanium** Targ.

Asterolecanium viridulum Ckll.

(Pl. **4**, fig. 3; pl. **6**, fig. 1, A-F.)

This species is represented in the Jorgensen collection by a lot of material collected at Bomplana, Misiones, Argentina, July, 1910, on Compositae, under collection number 819*a*.

This is a pit forming species which appears to have been overlooked by Mr. E. E. Green (Jour. Econ. Biol., vol. V, 1910, pp. 3–5) in his discussion of the pit-forming species of *Asterolecanium*. In the key given there for the separation of such species, *viridulum* runs to *thespesiae* Green, from which it may be separated, from a comparison with the illustrations and description of the latter species (Coccidae of Ceylon, pt. III, 1909, p. 331, and pl. CXXII, fig. 1–5) by having the discal paired pores slightly but distinctly smaller than the largest marginal paired pores, the marginal row of unpaired glands single, except at a few points, and by having a more or less distinct faded salmon-colored fringe on the margin of the test, and a test more elongate in proportion to its width.

The following details and corrections may be added to the original description of this species as given by Prof. Cockerell (Can. Ent. XXXIV, 1902, p. 89).

Adult Female.—Test in unmutilated specimens with a relatively wide, straight, continuous fringe of faded salmon color, and with a considerable quantity of dirty curled-thread secretion over the uniformly convex dorsum; marginal paired glands in a double row as stated in the original description, except on about the posterior fifth of the body, where the row is single; with the marginal paired gland pores varying slightly in size, but with some of them, at least, larger than the discal paired gland pores; with numerous dorsal paired gland pores scattered without apparent order over the dorsal surface of the body.

Young Larva.—Elongate oval, tapering behind, antennae and legs small, the former 6-segmented, with a complete marginal and median double row of paired gland pores, and an incomplete intermediate row of the same on each side; anal ring with 6 small hairs, surrounded by 4 chitinized plates making up a ring, on each side of which projects one short and outside of this one long hair; tarsal claw straight, sharply bent at extreme tip.

Statements as to details of structure at variance with the original description have been verified by an examination of the type slide of the species, deposited by Prof. Cockerell in the National Collection of Coccidae.

Genus **Birchippia** Green.

Birchippia americana Leon.

(Pl. **4**, fig. 4.)

The specimens of this species in the Jorgensen collection are from Cordillera de Mendoza, Argentina, on *Larrea divaricata*, Feb. 8, 1909, under collection number 6*a*.

It may be noted with reference to the original description of this species (Bol. Lab. Zool. gen. e agr. R. Scuola sup. d'Agr. Portici, vol. V, 1911, p. 246–248, fig. VI), that Dr. Leonardi gives *B. anomala* as the species heading in the explanation of his figures, but this is apparently incorrect, since the drawings agree with his description of *B. americana*, and do not agree with Green's figures and descriptions of *B. anomala*. The genus *Birchippia* Green appears to be separable from *Solenococcus* Cockerell only by the absence of a median caudal tubercle, between the united anal plates, judging from an examination of Green's figures and a study of this, the only other species at present included in the genus.

Genus **Eriococcus** Targ.

This genus is represented in the collection at hand by four species, of which three appear to be undescribed, while the specimens of the fourth have been referred to a species already described from South America, although there are some variations in the material from what appear to be typical specimens of the species in question.

So far as the writer knows, there are at present four described species of the genus *Eriococcus* reported from South America. Three of these, together with the three new species are included in the following key. *Eriococcus parcispinosus* Leon. (Bol. Lab. Zool. gen. e agr. R. Scuola sup. d'Agr. Portici, vol. V, 1911, p. 248, fig. VII) is obviously a species of the genus *Erium*, as it is at present recognized, which will be discussed later in connection with *Erium armatum* (Hemp.) *Eriococcus diversispinus* Leon. (Bol. Lab. Zool. gen. e agr. R. Scuola sup. d'Agr. Portici, vol. V, 1911, p. 249, fig. VIII) is not included in the following key to the species of the genus since it is known to the writer only from the original description. Assuming that Leonardi's description and figures are completely accurate in such details, it may be readily separated from the other known South American species by the presence of only a pair of spines on each margin of each abdominal segment and by the relatively small size of the anal lobe spines. Such structures as the pores of the hind coxae and femora and the cup-shaped body glands which are mentioned in the following key and descriptions can be studied satisfactorily only in stained specimens.

Key to South American Species of Eriococcus.

a. Abdominal body spines confined to the margins of the segments, two large and one small, stout, blunt-tipped spines occurring on each margin of each abdominal segment; anal lobe spines stout, blunt-tipped .... *araucariae Mask.*

aa. Abdominal body spines varying in number but always present on the dorsum, all spines slender, nearly sharp-pointed at apex; anal lobe spines elongate, slender.

  b. Dorsal body spines small, distinctly smaller than the largest marginal spines, not very numerous nor conspicuous.

    c. Subapical hair of anal lobes longer than largest anal ring hair; apical hair of anal lobes more than twice as long as anal ring hair .... *mendozae* n. sp.

    cc. Subapical hair of anal lobes a little shorter than longest anal ring hair; apical hair about twice as long as anal ring hair *leguminicola* n. sp.

bb. Dorsal body spines large, numerous and conspicuous, not noticeably differentiated in size from the body marginal spines.

d. Pores of hind coxae irregular in size and shape, grouped into clusters, each cluster surrounded by a more or less distinct chitinous thickening; a relatively larger species. . . . *perplexus* Hemp.

dd. Hind coxal pores approximately uniform and circular, scattered, not grouped as in the preceding species.

e. Hind tibiae with at most a cluster of only three or four more or less fused pores above, just before the apex; hind coxal pores relatively small, rarely if ever exceeding 14–28 in number. . . . .*braziliensis* Ckll.

ee. Hind tibiae with a group of about 6 or more large conspicuous pores above just before the apex; hind coxal pores large and conspicuous, usually 40 or more in number . . . . *jorgenseni* n. sp.

Eriococcus araucariae Mask. and *E. perplexus* Hempel have thus far been reported only from Brazil.

Eriococcus mendozae, n. sp.

(Pl. **4**, fig. 2; pl. **5**, fig. 1, A-H.)

Sac of Female.—Occurring on the twigs of the host, most abundantly at points where a cluster of tiny shoots has branched off; light buff in color surface finely and densely matted, thin, firm in texture and rather brittle in the dried specimens, with a rather large posterior subdorsal opening; about 4 mm. in maximum length, normally oval in shape, rather convex, and with faint or indistinct transverse grooves marking the abdominal segmentation; almost invariably distorted and twisted due to crowding or to the position on the host; younger sacs lighter and more elongate oval.

Adult Female.—Maximum length of specimens mounted on slide 2.5 mm., maximum width of same 1.75 mm., plump, broad oval, evidently strongly convex dorsally in life; color of dried and shriveled body dark reddish; giving off dark wine color stain when boiled in KOH; antennae 7-segmented, the diameter of corresponding segments varying somewhat in different individuals, measurements in microns as follows:

II.	III.	IV.	V.	VI.	VII.
39	60.5	60.5	26.5	25	35.5
39	60.5	57	25	21.5	35.5
39	78.5	43	25	25	35.5
39	75	50	25	64	
39	62.5	53.5	28.5	18	35.5
39	60.5	60.5	25	25	35.5
39	68	64	25	25	35.5
35.5	60.5	57	53.5		broken
35.5	60.5	46.5	25	60.5	
35.5	57	53.5	25	28.5	32

occasional fusion of the segments, as of the last two, or of the fifth and sixth occurring, in which case there is a partial suture present; legs characteristic of the genus, the relative proportions indicated in the figures, tarsal digitules stouter than claw digitules, both projecting well beyond the apex of the claw and distinctly knobbed at apices, claw with a distinct denticle close to the apex, anterior tibiae and tarsi about equal in length, the four posterior tibiae slightly but evidently longer than the corresponding tarsi, hind coxae with numerous, 30 or more, medium size pores, hind femur with 4–6 obscure clustered pores above near apex; anal lobes not very large or stout, incompletely chitinized, with three long slender dorsal spines and an apical and three ventral hairs, of which two are basal and the other is placed close to the apical hair which is long and stout, $265\mu \pm$, much more than twice as long as the longest anal ring hairs which are about $110–115\mu \pm$, ventral subapical hair of the anal lobes relatively very long, much longer than anal ring hair, $160–170\mu \pm$; anal ring as usual in the genus, open anteriorly, each half with a solid interior band containing four or five small isolated pores in its whole length, bordered outside by a single row of irregular-sized approximately circular pores, which is interrupted at intervals by the larger circular bases of the four anal ring hairs present on each half; body with stout tapering spines, slender but bluntly rounded at apices both dorsally and laterally, those on the margins much larger and stouter than those on the dorsum, at least on the abdomen, each margin of each abdominal segment typically with three large spines, all different in size, the largest placed posteriorly, the next in size anterior to the largest and the smallest inside towards the middle line of the body from the other two, so that the bases of the three are in a triangle, largest marginal spines 70μ long $\pm$, intermediate marginal spines 53μ long $\pm$, smallest marginal spines 43μ $\pm$, average size dorsal abdominal spine 25μ, with some dorsal spines on thorax and head as much as 44μ long, but these few and scattered, dorsal spines without apparent definite arrangement, except that they are evidently in transverse bands, corresponding to the segments, on the abdomen; ventral abdominal hairs occuring in a single but not straight nor evenly curved row on each segment, except that there is on most of the segments a median pair, flanked on each side by a single plainly larger hair, these in turn flanked by a series of smaller hairs; cup-shaped gland duct bases rather shallow, very slightly asymmetrical, fairly numerous; ventrally with scattered but segmentally arranged multiocular pores, these more numerous on the posterior abdominal segments.

This species has been described from 7 specimens mounted on slides and from a small amount of unmounted material from Mendoza, Argentina, host and date of collection not given, under collection number 17*n*.

The types are in the U. S. National Collection of Coccidae.

Eriococcus leguminicola, n. sp.

(Pl. 4, fig. 5; pl. 5, fig. 2, A-G.)

Sac of Female.—Occurring on the tiny twigs of the host and on the bases of the pinnate leaves, usually in clusters; maximum length a little over 2 mm., normally short oval, strongly convex dorsally, almost circular in median cross section, with two dorsal rows of small secretionary tubercles, these indistinct or not evident in the oldest forms; color varying from dirty white through buff to a faded salmon, the old female sacs of the previous generation a faded white, usually almost wholly obscured by black incrustation, probably produced by fungus growing in the intestinal excretion of the younger growing females; with a rather large posterior circular opening; surface rather roughly matted, thin but fairly firm in texture.

Adult Female.—Maximum length of adult female mounted on slide 2.25 mm., broad oval when flattened on the slide, dark red before boiling in KOH, giving off dark reddish stain in this solution: antennae 7-segmented, the measurements of the different segment in microns as follows:

II.	III.	IV.	V.	VI.	VII.
. .	37.5	32	21.5	21.5	26.5
28.5	35.5	32	25	18	28.5
28.5	50	25	21.5	21.5	30
28.5	35.5	32	21.5	21.5	30
25	28.5	25	18	broken	
28.5	32	35.5	23	18	32
25	35.5	35.5	21.5	21.5	30
28.5	32	35.5	21.5	21.5	28.5
26.5	35.5	32	21.5	18	30
25	32	28.5	18	18	32
28.5	28.5	35.5	21.5	19.5	28.5
25	32	35.5	21.5	19.5	26.5
28.5	35.5	35.5	21.5	23	26.5
32	35.5	37.5	23	25	28.5
25	28.5	35.5	25	21.5	30
28.5	35.5	35.5	25	broken	

aborted, total length 142.5, of III–VII is 107

legs normal for the genus, the tarsus averaging slightly but uniformly longer than the tibia in all the legs, hind coxae with a number, usually about 20, of rather large pores, two or three of these sometimes fused into a single light streak; anal lobes small, tapering strongly, with three long slender dorsal spines, the outer the smallest, all averaging distinctly larger than most of the similar spines on the dorsum of the abdomen, and with an apical and a central subapical and two basal hairs, apical hair averaging 230–250μ, subapical hair averaging 107–125μ, longest anal ring hairs averaging 107–125 μ, these lengths as given relative according to the size of the specimen; anal ring with 8 hairs, characteristic of the genus, as described in the preceding species; body dorsally and laterally, at least on the abdomen, with only relatively few scattered spines, at least an occasional one on the abdominal margin distinctly or even conspicuously larger than the average sized dorsal abdominal spines; the actual size of the corresponding spines in different specimens apparently quite variable, particularly in lots from different host plants, but all showing the same approximate relationship between the marginal and dorsal abdominal spines, these body spines fairly stout, tapering, somewhat curved, slender at apex, but with the tip bluntly rounded, lengths as follows: from *Mimosa* sp., marginal, largest noted 43μ, but most about 35μ or a little less, dorsal abdominal, largest noted 19μ, smallest 7μ; on *Caesalpinia* sp. largest marginal 29μ, average length about 20–22μ, largest dorsal abdominal noted about 16μ, average size 8–10μ; on *Leguminosae*, largest marginal noted about 42μ, average size about 25–28μ, largest size dorsal abdominal noted about 21μ, smallest about 9μ; number, size and position of the ventral abdominal hairs not determinable from the material available for study; cup-shaped gland bases deep, rather narrow, slightly asymmetrical, the duct leading to the surface long and slender.

Young Larva.—About 0.5 mm. long when mounted on slide, but varying, stoutest and widest anteriorly, tapering posteriorly; antennae 6-segmented, both these and the legs large in proportion to the size of the body; hind coxae apparently without pores, tarsus a little less than twice the length of the tibia; abdomen dorsally with eight rows of spines, the median pair on each segment small, the submarginal and marginal pairs much larger, all six of these in line transversly, and with the fourth spine on each side small and placed anterior to and a little outside of the large marginal spine on each segment; ventrally with four hairs near the median line and another, almost spine-like hair near the lateral margin on each side; anal lobes with three relatively large spines dorsally, a very long apical hair and another, ventral hair, somewhat longer than the anal ring hairs; anal ring with six hairs, and with a rather large hair close to each side but separate from the anal ring; with a few multiocular gland pores ventrally and apparently with an occasional very tiny indistinct cup-shaped gland dorsally.

Male Puparium.—Elongate oval, about 1.5 mm. long, slender, convex, the anterior half nearly circular in transverse section, dorsum flattened posteriorly, caudal apex terminating in a horizontal semicircular slit as wide as the body, dirty white in color; adult male not observed.

This species has been described from 16 specimens mounted on slides and a number of unmounted specimens still in position on the host plants; the material has all been collected under the number 334*b* and is from Bomplana, Misiones, Argentina, from *Mimosa*, *Caesalpinia* and an unstated Leguminosae, collected June, 1910.

The types are in the U. S. National Collection of Coccidae.

In spite of the considerable number of specimens mounted; it has not proven possible to obtain very satisfactory slide mounts of any of this material and there is in consequence a little doubt regarding some of the points given in the description. In this respect, particular attention is called to the apparent proportional reduction in the actual size of the body spines of the specimens from *Caesalpinia* as compared with specimens from the other hosts. As careful a study as was possible of the other structural characters of the specimens does not show any other differences in the two lots of material that are not easily included within the limits of variation of either lot, so there does not appear to be any justification for separating the specimens from *Caesalpinia* as a distinct species.

Eriococcus braziliensis Ckll.

(Pl. 5, fig. 5, A-E; fig. 6, A-E.)

The specimens from this collection which have been determined as this species were obtained from *Baccharis* sp., from Compositae, and from unstated host plants at Bomplana, Misiones, Argentina, June, 1910 under collection numbers 22*c* and 710*b*.

The hind coxal pores in these specimens average a little larger than in the material from Brazil already in the National Collection of Coccidae, and there also appear to be some slight differences in the appearance of the body spines, but this last is explainable from the rather poor condition of the mounts from the Brazilian material.

Eriococcus jorgenseni, n. sp.

(Pl. 4, fig. 8; pl. 5, fig. 4, A-F.)

Sac of Female.—Occurring on the leaves and twigs of the host, singly or in clusters; elongate, almost parallel-sided, tapering posteriorly and rounded off in front, normally flattened below and convex, approaching hemispherical dorsally, with a posterior circular opening; maximum length 5 mm., usually less when crowded, normal width 2 mm., white, more or less faintly tinged with buff, the intersegmental areas showing as faint transverse white grooves; surface rather roughened and fuzzy, thin and fragile in texture.

Adult Female.—Dried shriveled adult dark reddish in color, giving off dark brownish wine-colored stain when boiled in a solution of KOH; length of body mounted on slide about 3 mm., width 1.75–2 mm., shape oval; antennae 7-segmented, the lengths of the different segments in microns as follows:

II.	III.	IV.	V.	VI.	VII.
35.7	50	43	21.4	18	35.7
35	43	50	21.4	21.4	35.7
34	43	43	21.4	21.4	35.7
35.7	46.4	46.4	broken	..	..
32.1	43	32.1	21.4	18	32.1
35.7	50	46.4	21.4	19.6	35.7
35.7	46.4	53.5	21.4	19.6	35.7
35.7	46.4	42.8	broken	..	..

32.1	44.5	50	broken .	..	..
35.7	50	53.5	21.4	21.4	37.4
35.7	42.8	46.4	21.4	21.4	35.7
35.7	49.9	35.7	21.4	17.8	35.7
28.5	42.8	39.2	21.4	21.4	35.7
28.5	46.4	39.2	17.8	17.8	35.7

antennae and legs both rather small, the latter with the tibia and tarsus about equal in length, the hind coxae with numerous rather large, approximately circular pores, the number varying from 26 to 60, with the average to each coxa around 40; and lobes small, rather stout, round-pointed, with three large stout dorsal spines, the longest sometimes as much as 53μ long, and apical, a subapical and basal ventral hair, apical hair 230–270μ ±, subapical 120μ ±, longest anal ring hair about 125μ ±; anal ring with 8 hairs, the ring itself typical of the genus; body dorsally with numerous large, slightly curved, strongly tapering spines, slender tipped, rounded at apex, these not noticeably differentiated in size or position from the similar marginal spines; body ventrally with a transverse row of small hairs, varying in length, on each of at least the abdominal segments; ventral multiocular gland pores rather numerous; dorsal cup-shaped gland bases rather broad and shallow, slightly asymmetrical.

Male Puparium.—Occurring on the leaves and twigs of the host; about 1.75 mm. long, elongate flat beneath, convex above, flattened caudally, with a wide horizontal semicircular opening at the caudal apex; delicate in texture, thin but opaque, whitish, surface rather fuzzy.

This species has been described from 13 specimens mounted on slides and a number of specimens in position on the host plant, sent from Bomplana, Misiones, Argentina, December, 1910, under collection number 854*a*, some material from "Myrtaceous plant," some on "*Myricia apiculate*" and some on an unstated host.

The types are in the U. S. National Collection of Coccidae.

Genus **Erium** Cockerell.

This genus is credited to Crawford in the Catalogue of the Coccidae of the World, 1903, p. 112 by Mrs. Fernald, and to Maskell by Ferris in The California Species of Mealy Bugs, 1918, p. 75. An examination of the first bibliographical reference given in the Catalogue, that to Maskell (Trans. N. Z. Inst. XXIV, 1891, p. 35) shows that Maskell describes the type species of the genus, *globosus* Mask. as a *Pseudococcus*, and merely states that in the Crawford collection, from which he obtained his specimens of the species, it had been labeled *Erium globosum*. Maskell does not make any statement which could be construed as establishing the name *Erium* as even a subdivision of the genus *Pseudococcus*, and consequently the first use of this name in literature for a group of coccids is by Cockerell (Am. Nat. XXXI, 1897, p. 590), who states "(5). *Erium*, Crawford, ms. This name will stand for the subgenus of *Dactylopius* without lateral cottony tufts,—. The type is *D. globosus* Mask.," and the genus must therefore be credited to him and from that date.

So far as is known to the writer, there are at present two described species of this genus from South America, one, *Erium parcispinosum* (Leon.) (*Eriococcus parcispinosus* Leon. Bol. Lab. Zool. gen. e agr. R. Scuola sup. d'Agr. Portici, vol. V, 1911, 248–9, fig. VII), and the other *E. armatum* (Hemp.) (*Eriococcus armatus* Hempel, Rev. Mus. Paulista, IV, 1900, p. 383) both incorrectly described originally as *Eriococcus*. The proper position of *E. parcispinosum* (Leon.) does not appear to have been noted heretofore. Assuming that the published descriptions and figures of the two species are correct, they may easily be separated by an examination of the antennae, *E. parcispinosum* having 8-segmented antennae, while those of *E. armatum* are 7-segmented.

Erium armatum (Hemp.) is represented in the collection from Sr. Jorgensen by material from Mendoza, Argentina, host and date of collection not given, under collection number 38*b*.

Subfam. **TACHARDIINAE.**

Genus **Tachardia** R. Blanch.

Tachardia lycii Leon.

The specimens of this species in the collection at hand agree very well with Leonardi's description and figures of *Tachardia lycii* (Bol. Lab. Zool. gen. e agr. R. Scuola sup. d'Agr. Portici, vol. V, 1911, p. 256) with the single exception that they average larger than the measurements given by him. While it is of course impossible to make any definite statement, it appears to the writer, after a careful study of Leonardi's description of *T. cordaliae* (Ibid., p. 258), that it is very doubtfully distinct from the *T. lycii* described on the preceding pages.

Two lots of material have been examined, both from Mendoza, Argentine under collection numbers 3*h* and 39*e*, there being no additional data.

Subfamily **COCCINAE.**

In addition to the known and apparently new species of this subfamily which are treated in their proper systematic sequence, there were four lots of material which could not be determined specifically on account of the scarcity of specimens, but these are included with generic or tentative determinations for the sake of the greatest possible completeness in the report, as follows:

Pulvinaria sp. This species, from Misiones, Argentina, Nov. 1910, under collection number 168*a*, is probably new, but there is only a single mounted specimen, and some unmounted parts of other specimens available for examination, so it must be left until additional material is available for study.

Ceroplastes sp. Under collection number 17 there are a few specimens of a *Ceroplastes* obtained from *Veronica elliptica* at Buenos Aires, Argentina, May, 1911, but the number is too few and their condition too poor to make a specific determination possible.

Ceroplastes sp. Under collection number 3 there is a specimen or two of a species of this genus, possibly the same as the preceding, obtained from *Lithraea molleoides* at Buenos Aires, Argentina, May, 1911. As in the preceding lot, the material is insufficient for specific determination.

Akermes verrucosus (Sign.)(?). From Bomplana, Misiones, Argentina on Solanaceae, November, 1910, under collection number 92*a*, there is a single specimen of a large convex, almost spherical, lecanine scale insect, which seems to agree rather well with Signoret's description of *Lecanium verrucosum* (Ann. Soc. Ent. Fr., (5) III, 1873, p. 442) which was described from Montevidio, Uruguay, and has been placed by Cockerell in his genus *Akermes*. The writer is inclined to question the correctness of this reference of Signoret's species to *Akermes*, since it has well developed legs and antenne, while the type of the genus, *A. bruneri* Ckll. has both of these so very greatly reduced that they are almost wanting.

Genus **Ceroplastes** Gray.

Ceroplastes bruneri Ckll.

The specimens of this species from the Jorgensen collection are all immature, but a comparison with the type material, kindly deposited in the U. S. National Collection of Coccidae by Prof. Cockerell leaves no question as to the identity of the material. Prof. Cockerell (Can. Ent., XLII, 1910, p. 76) establishes this species as the type of a new subgenus, *Ceroplastidia*. This subgenus, so far as the writer can determine, is synonymous with *Gascardia* Targ., a genus described by Targionia Tozzetti (Bull. Soc. Ent. Ital., XXVI, 1894, p. 456, and placed by him in the) subfamily *Tachardiinae*, but redescribed by Newstead (Quart. Jour. Inst. Comm. Res. Liverpool Univ., vol. III, 1908, p. 3 et. seq.) and properly placed close to and doubtfully distinct from the genus *Ceroplastes*. Neither genus appears to be founded on any definite morphological characters that would distinctly separate it from *Ceroplastes*, and Newstead's opinion regarding the very close relationship with the latter genus appears to be fully justified by an examination of Prof. Cockerell's type of *Ceroplastidia*.

The wax in the immature specimens of *C. bruneri* which are in this collection is light olive-green in color, while the white secretion mentioned by Cockerell is very conspicuous. There are three lots of the material, one on Leguminosae from Bomplana, Misiones, Argentina under collection number 52*a*, one from Misiones, Argentina on *Acacia*, June 17, 1909, and the third from Misiones, Argentina on *Acacia riparia*, May, 1909, both of the latter without collection numbers.

Ceroplastes grandis Hempel.

The material of this species in this collection has been compared with cotype specimens from Mr. Hempel. The size of the dried cotype specimens is somewhat smaller than is indicated by Hempel in his original description (Riv. Mus. Paulista, vol. IV, 1900, p. 455), while the color is a uniform light buff or pale clay-yellow, with two narrow lateral streaks of white secretion on each side. All of the Jorgensen material is somewhat smaller than this cotype material, not much more than 8 mm. in length in any case, but it has not been possible to find anything else that would differentiate these lots of specimens from the cotype *C. grandis* of Hempel, all the structural characters apparently being the same, if allowance be made for only a limited amount of variation.

The material examined is as follows: On *Cephorescyhon barbinervis*, Buenos Aires, Argentina, May, 1911, collection number 10; on *Scutia buscifolia*, Buenos Aires, Feb. 1911, collection number 11; on Compositae and on *Baccharis salicifolia*, Bomplana, Misiones, Argentina, October, 1910, collection number for both hosts 76*a*; on *Vitex montividiensis*, Bomplana, Misiones, Argentina, Oct. 1910, collection number 322*d*; on *Actinostema lanceolata*, Bomplana, Misiones, Argentina, Oct. (1910?), collection number 395*a*; on *Ilex paraguayensis*, Bomplana, Misiones, Argentina, Oct. 1910, collection number 886*a*; on unstated host, May, 1911, Buenos Aires, Argentina, without collection number.

It is of course impossible to make a definite statement without having type material to examine, but there seems to be nothing but the question of size to distinguish Cockerell's *Ceroplastes bergi* (Com. Mus. Nac. Buenos Aires no. 8, 1901, p. 288) from *C. grandis* Hempel. The question of the difference in the number of antennal segments is deliberately ignored in making this suggestion, especially since Prof. Cockerell mentions that one of the joints in the antennae is indistinct. In view of the fact that the final color of the dried cotype material, received from Hempel, of *C. grandis* is buff or clay-yellow, quite different from the color of the fresh and probably living specimens as noted by Hempel in his original description, there is evidently a gradual but very decided change in the color of the wax, presumably due to its drying out after death or separation of the insect from the living host plant, and any differences in the color of the wax of *C. bergi*, as compared with *C. grandis* such as are noted by Cockerell, are easily susceptible of explanation as being due to the stage of the drying-out process which had been reached when they were described by Prof. Cockerell.

Ceroplastes novaesi Hempel.

The writer has identified as this species four lots of material, two each from widely separated localities in Argentina, although with some doubt and certain reservations. However, it is not considered advisable, in view of the present condition of the classification of this genus, to describe any new species where material is possibly referable to any described species. The specimens from the Jorgensen collection have been compared with cotype material in the U. S. National Collection of Coccidae, kindly contributed by Mr. Hempel. No material of *Ceroplastes novaesi mendozae* Ckll. (Can. Ent. XXXIV, 1902, p. 93) has been available for examination. The collections are as follows: Mendoza, Argentina, on *Baccharis salicifolia*, Feb. 10, 1909, collection number 14*i*; Mendoza, Argentina, on *Baccharis subulata*, Feb. 8, 1909, collection number 18*c*; Bomplana, Misiones, Argentina, on *Baccharis* sp. July, 1910, collection number 181*a*; Bomplana, Misiones, Argentina, on *Compositae*, June 1910, collection number 721*h*.

Ceroplastes subrotundus Leon.

The material at hand, as in the preceding species is somewhat doubtfully referred to this species of Leonardi. The description agrees quite well, particularly if allowances are made for the scarcity of the material available to Leonardi for examination, and for the rather poor condition of the Jorgensen specimens of the species. It is represented by a lot of material from Cordillera de Mendoza, Argentina, on *Caesalpinia praecox* (Leguminosae), Feb. 8, 1909, collection number 4*a*.

Ceroplastes lucidus Hempel.

This species is represented in the Jorgensen collection by a single lot of material from Mendoza, Argentina on *Lippia lycioides*, Feb. 8, 1909, under collection number 126*b*. A comparison with cotypes of this species deposited in the U. S. National Collection of Coccidae by Mr. Hempel shows no apparent morphological differences and only the single external difference that the color of the wax in the specimens from Mendoza is a yellow-brown while in the type material it is strongly reddish brown. Hempel in his original description notes this variation in his material. It seems rather surprising to find this species apparently occurring naturally in two such widely separated localities as southeastern Brazil and western Argentina, although what seems to be a similar situation exists in the case of *C. novaesi* Hempel.

The following species of this genus is described with some hesitation, but it has not been possible to place the specimens even approximately under any already described species from this region, although it is quite possible that the species has already been described.

Ceroplastes deciduosus, n. sp.

(Pl. **4**, fig. 6; pl. **7**, fig. 2, A-G.)

Adult Female.—Occurring on the twigs of the host, strongly convex, subhemispherical, length, covered with wax, about 5 mm., width about 4.25 mm., height 2.5 mm.; in the fully developed female covered with wax the shape stout convex, with the whole surface irregularly nodulose, while the wax plate divisions are wholly obscured; in the immature forms (probably adult females before the development of ovaries and the chitinization of the derm) much less convex, rather flat pyramidal with the apex broadly truncate, with a sort of stout horseshoe-shaped dorsal waxy ridge surrounding the elongate oval central nucleus and with the borders of the poorly defined lateral plates produced into stout wavy ridges and otherwise pitted and ridged; normal color of the wax light golden yellow, but this varying to a dark orange-red in some individuals; wax on the dried specimens semi-transparent yellow within, hard and brittle, not very thick, and evidently very easily deciduous, since of the four specimens of adult females available for examination, three are completely denuded of wax and the fourth has a large chunk missing from one side; denuded female quite variable in color and usually conspicuously mottled, the colors ranging from blood-red to pale yellow, almost cream color; with a number of shallow pits dorsally among which it is possible to distinguish a more or less defined submedian dorsal row on each side running forward from anterior to the anal plates; surface except for the pits smooth and shining, except along the margin in the region of the spiracular grooves where it is punctured and wrinkled; the female boiled in KOH giving off a dark reddish brown color which stains the liquid strongly; the derm of the adult female still remaining yellow-brown with occasional clear areas after boiling, with the caudal horn inconspicuous and only slightly differentiated; in the immature specimens the caudal horn is low, slightly conical and more distinctly differentiated from the rest of the derm which becomes colorless on boiling; antennae of adult female 6-segmented, the measurements in microns as follows:

II.	III.	IV.	V.	VI.
43	100	21.4	25	28.5
39.2	101.5	21.4	28.5	32
46.4	100	42.8		35.7
43	103.5[1]	21.4	25	32

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[1] With an almost complete pseudo-joint near the apex.

legs as usual in the genus, the measurements of one of an adult female as follows: coxa, 100μ, trochanter 64.2μ, femur 110.6μ, tibia 93μ, tarsus, 43μ, claw 17.8μ, the measurements in all cases being of the greatest length, the corresponding parts on the different legs being approximately equal in length with the exception of the coxae, which are progressively larger from fore to hind, claw short and stout, in some specimens at least with a tiny denticle at tip, so the apex appears bidentate; with two digitules, one about twice the length of the claw, slender, knobbed at apex, the other a little longer, distinctly stouter and with an elongate flattened, blade-like apex; tarsal digitules about as long as claw digitules, both slender, knobbed at apex; shank of spiracles slender, ends greatly enlarged transversely, the outer more than the inner; marginal spines elongate, slender, acute, widely separated; spiracular spines numerous, stout, bullet-shaped or cylindrical, with the apex tapering conically and truncate, arranged in a close cluster of from about 26 to 48, varying considerably in size among themselves and in shape as well, those along the body margin the largest; dorsal surface with scattered elongate, slender, peg-like spines with rounded apices; ventral surface with similar but smaller and more scattered spines or hairs; dorsally with scattered unusual triocular pores, the three openings arranged in line, the two outer circular and much smaller than the inner; ventrally with a band of, roughly, around 200 multiocular disk pores running from each spiracle to the corresponding group of spines, with curved transverse bands of similar pores surrounding and anterior to the anal plates, and with some very minute scattered pores, apparently similar to the triocular pores described for the dorsum, although too small to be definitely recognized; anal plates together forming almost a circle, inserted at the apex of the small cone, an average length 157μ, width of each 78μ; each plate with the inner margin straight and the outer continuously curved, but plainly widest before the middle so the posterior outer face of the curve is longest and least sharp; showing a continuous thickening around the margin due to heavy chitinization; with two marginal setae near the caudal apex, the inner and posterior about 28μ long, the outer and anterior about 43μ long, normally with two dorsal setae set on the inner half about one-fourth or a little more of the plate length from the posterior apex and a third set close to or on the inner margin of the plate about half-way between the other two and the apex, but with some variation in these positions; ventrally on each plate with a single seta set close to the edge just anterior to and below the outer marginal seta, and with two or usually three other setae in a row along the ventral ridge of the plate, the posterior of these the largest, all these ventral setae smaller than those occurring on the dorsum; with five fringe setae on each side, the outer two the largest, the inner three smaller, the five forming into two groups; anal ring small, stout, nearly circular, with a row of pores along the inner and outer margins and with three hairs on each half, these set near the outer margin.

This species has been described from 23 specimens mounted on slides and from a number in position on the host plant, these nearly all immature. They were collected on *Lapium big-*

landulosum at Buenos Aires, Argentina, May, 1911, under collection number 12.

The types are in the U. S. National Collection of Coccidae.

Genus **Ceroplastodes** Ckll.

Ceroplastodes misiones, n. sp.

(Pl. **4**, fig. 7; pl. **6**, fig. 3, A-G.)

Test of Female.—Occurring on the small stems of the host; length about 2.75 mm., width 1.5 mm. height 1 mm., elongate oval, strongly convex, ends rounded, with low broad median carina which runs from the anal opening to the anterior border, except for a short distance at either end, and is divided into three sections, frequently with part missing or reduced; rest of dorsum smooth, laterally with a row of small blunt tubercles above, with a row of impressions or shallow pits below, these followed lower down by another row of low tubercles, this arrangement poorly defined and often not determinable; the test somewhat glassy, translucent whitish showing faint straight lines radiating from the lateral pits and wavy lines, somewhat similar to those on a mussel-shell, encircling the group of lateral pits; the anal plate orifice irregularly elongate oval.

Adult Female.—Color of dried form varying from light chestnut to dark reddish brown; body shriveling to the anterior end of the test, and wholly free from it, the fully expanded female mounted on a slide as much as 2.5 mm. long and 1.5–2 mm. broad, broad oval, the anal cleft short, so the anal plates are not inserted more than twice their own length within the posterior body margin; giving off a yellow-brown stain when boiled in KOH, the derm becoming nearly colorless; antennae quite variable, 7 to 8-segmented, the difference due to a division of the fourth segment, and indicated in the following table of measurements in microns by placing the measurements of the fourth segment in the 7-segmented antennae under the combined heading IV and V:

II.	III.	IV.	V.	VI.	VII.	VIII.
35.7	71.4	49.9	46.4	32.1	32.1	46.4
35.7	74.9	49.9	39.2	39.2	32.1	46.4
35.7	71.4	42.8	32.1	24.9	21.4	49.9
39.2	74.9	89.2		39.2	35.7	57.1
42.8	74.9	85.6		35.7	35.7	60.6
32.1	71.4	71.4		42.8	39.2	49.9
32.1	74.9	74.9		35.7	39.2	46.4
35.7	74.9	85.5		39.2	32.1	49.9

legs large, rather stout, average measurements of a middle leg as follows: coxa, 153.5μ, trochanter 100μ, femur 178.5μ, tibia 160.6μ, tarsus 114.2μ, claw 25μ, tarsal digitule 57μ, claw digitule 28.5μ, tarsal digitules long and slender, slightly knobbed at apex, claw digitules both stout, slightly swollen basally and apically; body margin with a continuous row of rather stout tapering spines, very bluntly rounded, almost truncate at apex, averaging about 18–22μ long and most spaced a little further apart than the length of one spine; accompanied by an occasional submarginal slender sharp seta about as long as one of the spines; spiracular region normally with three spines larger than the marginal, but sometimes with an additional pair of differentiated spines, the median the largest, averaging 57–71μ long, the second pair averaging proportionally to the median 36–57μ long, the third pair when differentiated, still smaller; dorsally with an occasional small spine-like seta set in a well-developed socket; ventrally with a median pair of long slender hairs on several segments anterior to the anal plates and with a pair of unequal size hairs near the antennal bases; dorsal glands apparently wholly of the long-tubed cup-shaped base type, these scattered dorsally but rather numerous along the body margin; with an anterior and a posterior dorsal pair of peculiar circular structures, probably the same as the submarginal tubercles of *Coccus* and related genera, each pair quite close to the corresponding end of the body; ventrally apparently with only circular multiocular disk pores, the scattered row running from each spiracle to the spiracular spines small, about 4μ diameter and with about 6 oculi, those occurring in bands and clusters in considerable numbers around and anterior to the anal plates much larger, about 7μ in diameter, and apparently with about 12 oculi; anal plates about 133μ long and 71μ wide, each triangular, with the posterio-lateral side longer than the anterio-lateral, with a distinct apical seta, usually broken off, about 32μ long, with three dorsal setae, the first about one-fourth of the plate length from the posterior apex and near the inner margin, the second a little further from the apex and nearer the outer margin of the plate than the inner, the third distinctly nearer the cephalic than the caudal apex of the plate and quite close to its inner edge; with three setae rather close together on the ventral ridge, the outer the largest, protruding beyond the plate apex; with a single large fringe seta on each side; anal ring apparently with 6 hairs, but this not determinable with certainty.

This species has been described from 5 females mounted on a slide and a number of unmounted specimens in position on the host plant, which appears to be a Compositae, although not named. The material is from Bomplana, Misiones, Argentina, Oct., 1910, on an unstated host plant under collection number 710*b*.

The types are in the U. S. National Collection of Coccidae.

Genus **Pseudokermes** Ckll.

Pseudokermes nitens (Ckll.)

(Pl. **4**, fig. 9.)

This species is represented by material from Bomplana, Misiones, Argentina, on *Eugenia uniflora*, Oct., 1910, under collection number 158*a*.

Genus **Akermes** Ckll.

Akermes bruneri Ckll.

(Pl. **4**, fig. 10.)

This species is represented in the Jorgensen collection by one lot of material from Posadas, Misiones, Argentina, on *Celtis tala*, April, 1910, under collection number 728.

The antennae and legs are present but minute and very greatly reduced; it has not so far been possible to locate any spiracular or marginal spines, although they probably occur in the species. The band of multiocular disk pores running from each spiracle to the margin of the body is very heavy, probably including several hundred of these pores closely crowded together.

Genus **Saissetia** Targ.

Saissetia oleae (Bern.)

This species is represented by two lots of material, one from Buenos Aires, Argentina, on *Pittosporum tobira*, May, 1911, with collection number 8, the other from the same locality, on *Nerium oleander*, during the same period, with collection number 5.

Saissetia silvestrii Leon.

There are a few specimens of what seems without question to be this species in the collection from Buenos Aires, Argentina, on *Celtis tala*, May, 1911, under collection number 24. The species was originally described from Cacheuta, somewhere in the subandean region of the republic from *Zuccagnia punctata*, and with no further records of its distribution in Argentina available, the evidence indicates a probable artificial introduction into Buenos Aires.

Saissetia argentina, n. sp.

(Pl. **4**, fig. 11; pl. **7**, fig. 1, A-H.)

Adult Female.—Occurring on the small twigs and branches of the host, frequently closely crowded in clusters; leaving a whitish mark, formed by waxy secretion when detached from the host; maximum length 2.75 mm., maximum width about 2.75 mm., height 2.25 mm., strongly convex, irregularly hemispherical, apparently normally covered with a thin transparent coating of hard wax which is very easily deciduous, leaving only a few small irregular wax scales on the more prominent points on the dorsum; surface of both wax and body faintly shining, smooth, body surface usually with a low elongate mid-dorsal ridge, this not noticed in a few specimens and typically with two shallow pits on each side of the middle line on the dorsum, these sometimes confluent so that there is apparently only a single elongate but short, shallow groove running lengthwise on the body on each side of the middle line; with a slight suggestion of a cubical form, due to the presence of faint traces of broad slightly rounded ridges at the four "corners" of the body, these elevations very indistinct or wanting, lateral only, not continued onto the dorsum; body surface in a band all around the margin faintly pitted and rugose, this rather broad band occurring between the margin and a lateral row of pits similar to those described as present on the dorsum, but less developed and more numerous; the body shape usually more irregular than described, in crowded specimens; body color reddish brown, about burnt sienna, with numerous closely set large, oval or somewhat irregular lighter brown areas, representing the derm pores; boiled in KOH the insect giving off a reddish brown stain, and staining the liquid a light reddish brown; the derm becoming semitransparent, but remaining strong reddish brown in color; the dorsal pits already mentioned appearing as two deep heavily chitinized pocket-like invaginations of the dorsum on each side; the derm pores clear, conspicuous, irregular in shape and size, with the median dorsal area showing small circular to oval pores, these gradually increasing in size till outside of the dorsal pits, there forming a broad circle of large irregularly shaped rather closely crowded pores, these again decreasing in size gradually till they become even smaller than the mid-dorsal pores in the submarginal area, becoming relatively minute in the marginal area, the pores in the anal plate area radiating more or less distinctly from the plates; antennae much reduced in size and length, maximum total length about 120μ, approaching the rudimentary type, obscurely 5 to 7-segmented, the joints so indistinct and variable as to prevent accurate tabulations of antennal measurements, measurements of a single antenna about as follows: I, 17μ, II, 7.5μ, III and IV, 47μ (with possible division making III 21.5μ and IV 25μ), V, 11μ, VI, 7μ, VII, 14μ (these lengths not including any allowances for space occupied by joints), the joint between III and IV, if present, very indistinct, the joints between V, and VI and VII large but incomplete; legs small, semi-rudimentary, rather stout in proportion to the length, with the different parts poorly formed and indistinctly separated, particularly the tibia and tarsus; total length, including the elongated coxa 105μ or less; coxa with about 5 hairs, trochanter very much reduced, with one or two hairs, femur apparently with three hairs, tibia apparently with four hairs, tarsus with about four hairs, tarsal digitules relatively long and slender, produced more than half the length of the claw beyond its apex, slightly knobbed at apex, claw short, broad and stout, the digitules similar to those of the tarsus but not so long; marginal spines few, scattered rather evenly along the body edge, small with slightly swollen bases, tapering uniformly to an acute tip, maximum length about 14μ, those at posterior end of body adjacent to anal cleft more closely set, and as much as 29μ long; spiracular spines typical of the genus, with one relatively long and large one, flanked by a very much smaller one on each side, middle spine 82μ long, lateral spines each about 12.5μ long all tapering, bluntly rounded at apices; dorsal surface apparently without spines or hairs, except for a few of the former, similar to and a little smaller than the marginal spines and probably homologous with them, placed along the edge of the anterior curve of the gap in which the anal plates are inserted; ventral surface with a number of slender hairs of various sizes some minute ones close to the spiracles, the exact position and relation of the others not determinable, but apparently with a pair much larger than the others somewhere anterior to the anal plates; the dorsal gland cell cavities or pores quite variable in size, depending on their location, with the true pore or opening a minute circle usually to one side of the very thin transparent outer surface covering of the cell cavity; the transparent area varying from irregularly circular to irregularly elongate oval, and usually surrounded by an area of darker brown than the remainder of the derm with approximately but by no means exactly the same shape as the clear area; of the clear areas, the largest observed in the subdorsal region about 170μ in largest diameter, the diameters in the middorsal region ranging from 25–50μ with the larger size nearer the average, through the whole dorsal and subdorsal region with an occasional minute pore with a diameter of about 6μ; the distances between the middorsal pores varying, but rarely less than 50μ; in the region of the large subdorsal pores, the minimum width of the chitinized separating area about the same, although on account of the larger size of the clear areas, the resulting impression given is that they are more closely crowded; in the submarginal region the clear areas smaller than dorsally, but even closer together and usually elongate oval in shape, the pores in the marginal band all much smaller than elsewhere, though very uneven in size, nearly circular, with a maximum diameter of about 15μ, and separated by widely varying distances, the minimum being about 25μ, but giving the impression that they are far more widely scattered and separated than in other regions of the dorsum; ventrally with fairly numerous but scattered minute elongate slender tubular glands with cup-shaped bases, the total length from opening to end of cup about 21μ, and with multiocular pores, a few scattered near each spiracle, an occasional one in the derm between it and the spiracular spines, and rather numerous groups in the anal plate region, the exact number and position of these not determinable; anal cleft completely fused for practically its entire length; anal plates together forming a short oval, almost a circle, sometimes unequal in length, maximum length about 165μ, width of each about 68–70μ, inner margins more or less parallel-wavy, but nearly straight, outer margins almost uniformly curved from base to apex; with four dorsal spines, one apical, two subapical and quite close to the apex, and the fourth a little caudad of the middle and quite close to the inner margin of the plate, with three or usually four spines of different lengths on the ventral ridge of each plate, with a single small fringe seta and with four small hypopygial setae, each plate with from one to five indistinct scattered oval pores in a slightly curved row running caudad and medially from a point on the outer margin about one-third of the plate length from its base, when only a single pore is present, located about the middle of the length of the plate and well inside the outer margin; with a small anal ring, length 87μ, width 36μ, very distinctly divided into two wide slightly curved halves, each about 10μ wide, with 10 anal ring hairs in all, the longest of these about 128μ, rather slender.

This species has been described from 15 specimens and parts of specimens mounted on slides and from a considerable amount of unmounted material, all from Mendoza, Argentina, collection number 17*h*, no data as to host or date of collection available.

The types are in the U. S. National Collection of Coccidae.

Subfam. **DIASPINAE.**

Genus **Aspidiotus** Bouche.

Aspidiotus hederae (Vallot).

This, the only Diaspinae included in the collection received from Sr. Jorgensen, has been identified by Mr. E. R. Sasscer. It was obtained at Buenos Aires, Argentina on *Nectandra acutifolia*, May, 1911, under collection number 23, and was found in the bottoms of small cup or pocket galls formed on the leaves of the host and protruding from the surface. Since it was possible to find an occasional Psyllid nymph in the same situation, however, it appears certain that the latter insect and not the *Aspidiotus* was responsible for the formation of the galls.

EXPLANATION OF PLATES.

Plate 4.

(All of these photographs are $2^1/_2$ times enlargement.)

Fig. 1. *Icerya minima*, n. sp. adult females.
Fig. 2. *Eriococcus mendozae*, n. sp., sacs of adult females on host.
Fig. 3. *Asterolecanium viridulum* Ckll., adult females on host.
Fig. 4. *Birchippia americana* Leon., adult females on host.
Fig. 5. *Eriococcus leguminicola*, n. sp., sacs of females on host.
Fig. 6. *Ceroplastes deciduosus*, n. sp., incompletely developed adult females.
Fig. 7. *Ceroplastodes misiones*, n. sp., tests of adult females on host.
Fig. 8. *Ericoccus jorgenseni*, n. sp., sacs of adult females on host.
Fig. 9. *Pseudokermes nitens* Ckll., adult females, somewhat injured by lepidopterous larva which has webbed the specimens.
Fig. 10. *Akermes bruneri* Ckll., adult females on host.
Fig. 11. *Saissetia argentina*, n. sp. adult females on host.

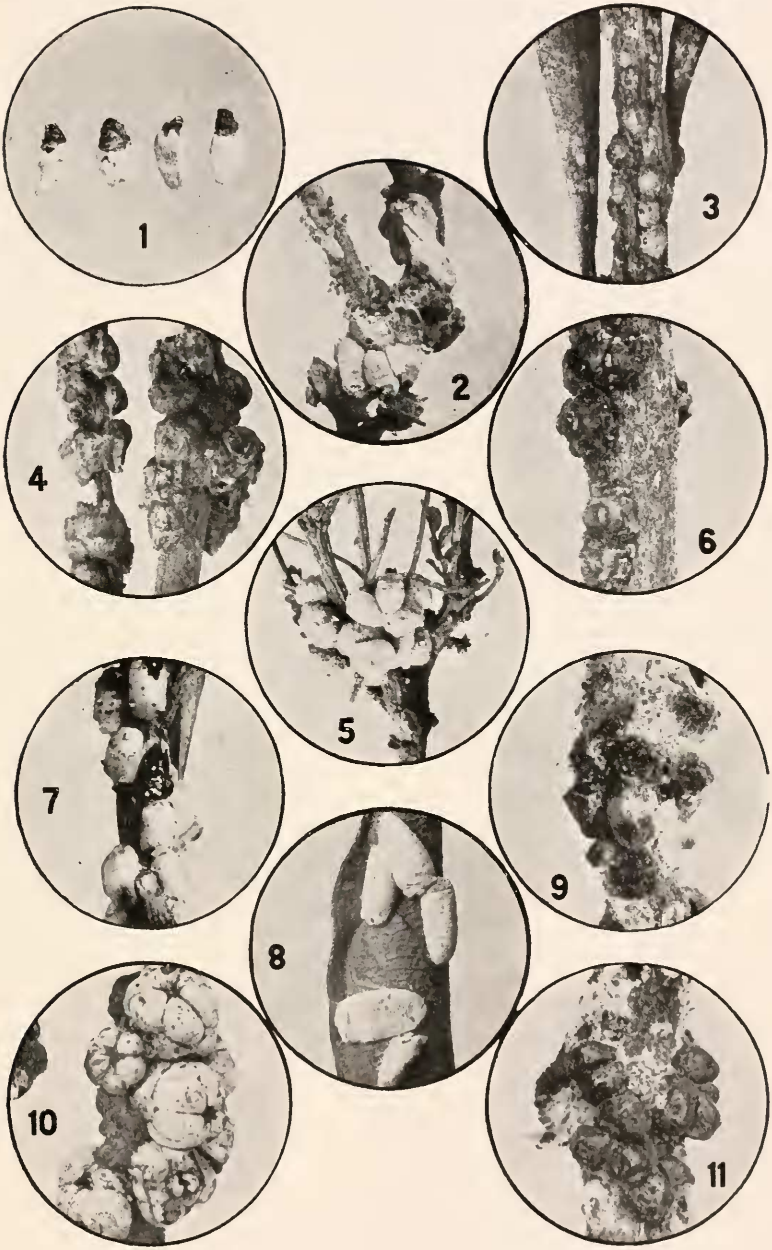
Plate 5.

(The designations of the body spines figured in this plate are as follows: A. anal lobe spine; D. dorsal spine; M. marginal spine.)

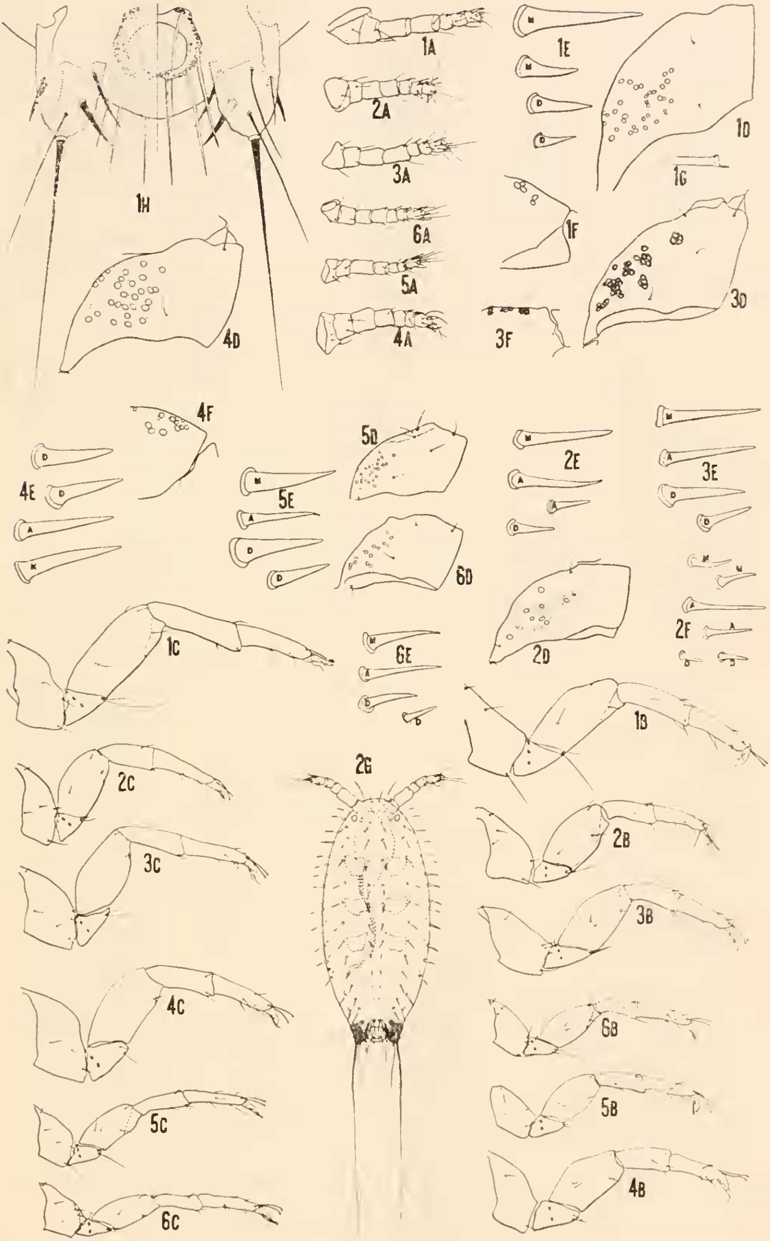
Fig. 1. *Eriococcus mendozae*, n. sp.: A. antenna, X66; B. fore leg, X66 C. hind leg, X66; D. hind coxa showing pores, X132; E. body spines, X256; F. apex of hind femur showing pores, X132; G. dorsal cupshaped gland duct, X256; H. apex of abdomen showing anal lobes and ring, dorsally to left, ventrally to right, with the characteristic number and position of the dorsal spines and the ventral hairs, X132.

Fig. 2. *Eriococcus leguminicola*, n. sp.: A. antenna, X66; B. fore leg, X66; C. hind leg, X66; D. hind coxa showing pores, X132; E. body spines from *Mimosa*, X256; F. body spines from *Caesalpinia*, X256; G. young larva from dorsum, X66.

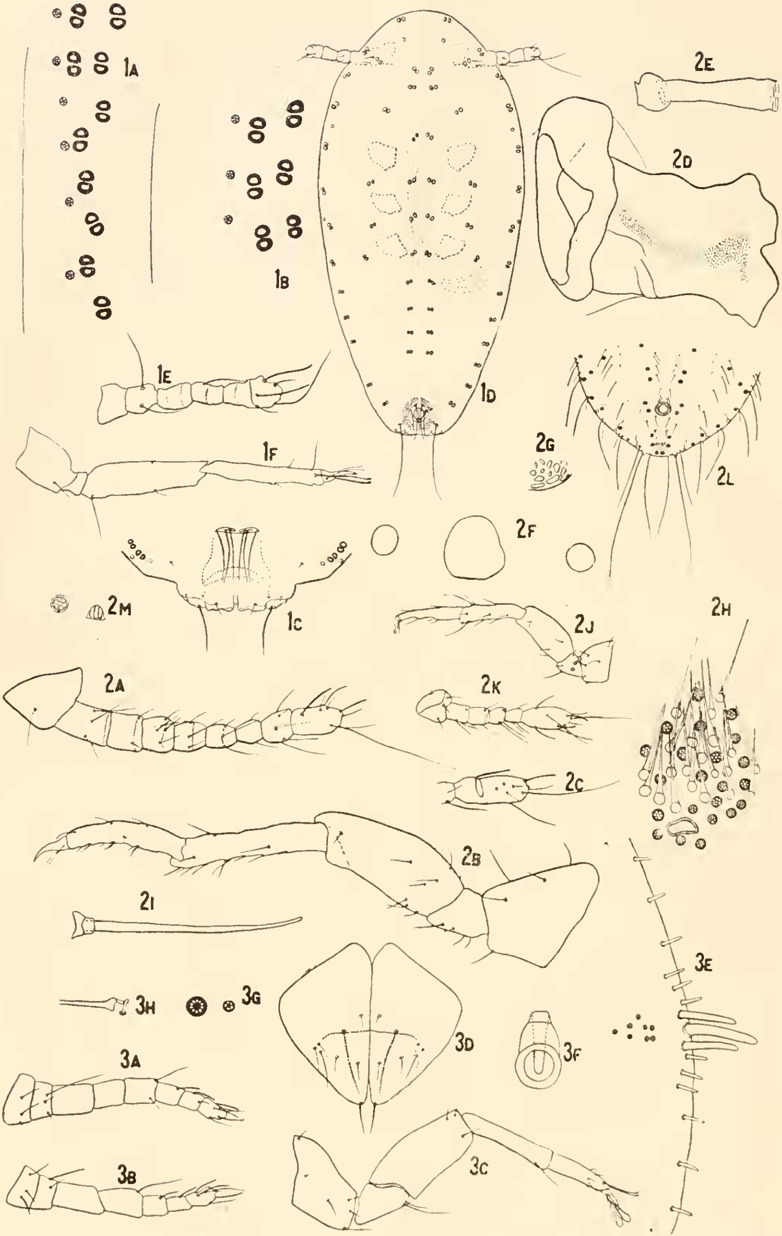
Fig. 3. *Eriococcus perplexus* Hempel: A. antenna, X66; B. fore leg, X66;



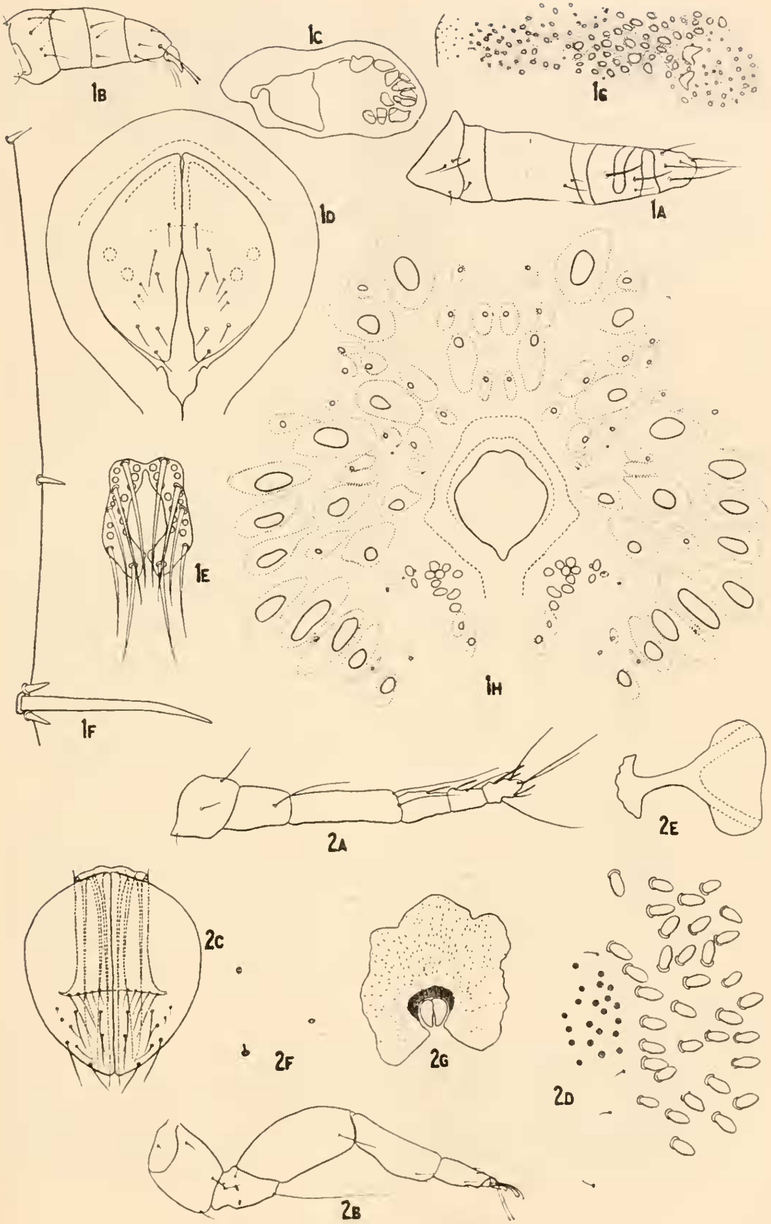
MORRISON—ARGENTINE COCCIDAE



MORRISON—ARGENTINE COCCIDAE



MORRISON—ARGENTINE COCCIDAE



MORRISON—ARGENTINE COCCIDAE